II. Amendments to the Specification

Kindly add the following new paragraph before line 1 on Page 1 of the specification:

This is a divisional application of U.S. Application No. 09/173,732, filed October 16, 1998, now U.S. Patent No. 6,289,259.

Kindly amend the paragraph bridging pages 16-17 as follows:

Hydraulic actuators possess non-linear characteristics such as change in hydraulic stiffness due to the change in oil volume between the valve and the cylinder piston and pressure-dependent flow, but the actuator should be operated in the linear region for effective parameter control. For example, the non-linear characteristics can lead to loss of control or even closed-loop instability. By providing increased processing power adjacent the hydraulic manifold, it is possible to compensate for the non-linear characteristics of each hydraulic actuator to ensure reliable operation. The microcontroller 210 can store a control program which compensates for such non-linear characteristic and ensures linear control of the hydraulic

actuator ~~valve~~. Referring to Diagram A below, the compensation method according to the present invention will compensate for the main nonlinearity f by an approximate inverse function f^{-1}, which can be implemented in the controller. According to Diagram A, the regular actuator input U is then substituted by the "corrected" value such that the relationship between U and y becomes approximately linear. Here G_A represents the dynamics of the control valve, G_P the mechanical system, and x the process states and variables.